UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF COMMERCIAL FISHERIES

CALIFORNIA FISHERY MARKET NEWS MONTHLY SUMMARY

April 1963

Part II--Fishing Information*

Sea-surface temperatures, fishing and research information of interest to the West Coast tuna-fishing industry and marine scientists

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* Part I - "Fishery Products Production and Market Data" is issued by the Bureau of Commercial Fisheries, Market News Service, Post Office Building, San Pedro, California

EXPEDITION CRISS-CROSS

The research vessel Spencer F. Baird returned to San Diego April 19 upon completion of expedition CRISS-CROSS, a 57-day geological survey of the eastern tropical Pacific Ocean. The trip was sponsored by Scripps Institution of Oceanography in cooperation with the Office of Naval Research. The primary purpose of this expedition was to determine the bathymetry of areas that have not been covered by precision sounding equipment and to dredge the tops of seamounts to determine their composition. The ship track is outlined in Figure 1.

The main area of investigation was the Cocos Ridge, which is an elongate submarine ridge running in a northeast-southwest direction from Costa Rica to the Galapagos Islands. Surveys were also conducted in the vicinity of the Mathematician Seamounts, a group of submarine volcanoes south of the Revillagigedo Islands. Echo soundings were made with a precision depth recorder (PDR) so that bottom bepths were recorded to an accuracy of one fathom.

Fourteen crossings were made perpendicular to the Cocos Ridge, and a series of echo sounding lines were run parallel to the ridge giving a criss-cross pattern of coverage. In general, the top of the ridge appears to be about 1000 fathoms deep. From this depth seamounts rise to peaks of 700 to 95 fathoms. The sides of the ridge are steep, dropping to depths greater than 2000 fathoms in a few miles. The ridge also is dissected by parallel elongate troughs having maximum depths greater than 1400 fathoms.

Nine seamounts on the Cocos Ridge were surveyed to find their shoalest points. Dredging of these seamounts indicated that basalt was the predominant rock type. Manganese was found as a coating on bottom materials contained in many dredge hauls and fossil coral was recovered from several seamounts, suggesting the presence of a guyot or former island.

The spacing of the echo-sounding lines from this expedition, coupled with sounding lines from earlier expeditions across the ridge, now permit the preparation of topographic charts of the Cocos Ridge area. All available information will be incorporated into the topographic chart series being prepared currently by the U.S. Bureau of Commercial Fisheries and the Institute of Marine Resources, University of California. Charts number 13, 14, and 15 (the last of the series of 24 being prepared for use by fishermen) should be available early this summer.

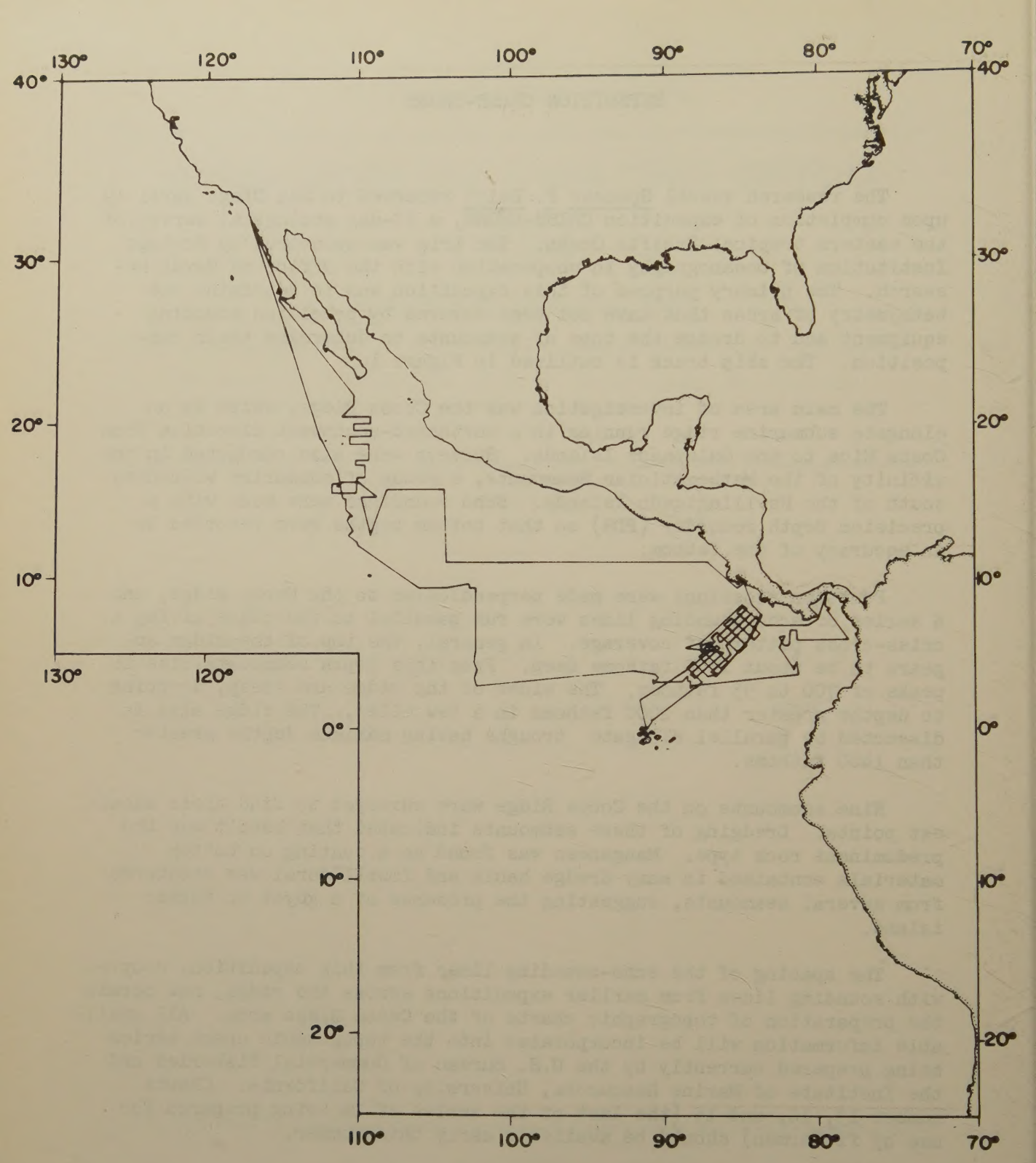


Figure 1.--Ship track of Scripps Institution of Oceanography research vessel Spencer F. Baird, Expedition CRISS-CROSS, February 21-April 19, 1963.

Bathythermographs were taken every three hours throughout the cruise with the exception of the final week when equipment failure terminated the BT program. Surface water samples were collected at all BT stations for salinity determinations.

Tuna were observed on Cocos Ridge on two occasions. The first sighting was recorded at Paramount Bank on March 4, and the second occurred at Cocos Island on March 18. Several small schools were observed in the Mathematician Seamounts area on February 25-28, and many large schools of skipjack were sighted in an area extending along latitude 11° N. from longitude 86° W. to 104° W. between April 5 and 8. During the latter period, the PDR recorded an unusually thick deep scattering layer of about 200 fathoms.

Thomas E. Chase, Geologist
U.S. Bureau of Commercial Fisheries
Expedition Leader

PORPOISE TAGGED

The Bureau of Commercial Fisheries Biological Laboratory, San Diego, has in progress a 90-day tuna behavior research cruise in waters off Central America. The expedition left San Diego early in March and will return about June 2. During the course of gathering information for studies of how tunas avoid purse seine nets and other aspects of their behavior, the scientific party is tagging spotted and spinner porpoises as the opportunity occurs, to obtain information about the migrations of these animals which are commonly associated with tuna schools. By the end of March, 52 spotted porpoises and 69 spinner porpoises had been marked with yellow dart tags similar to those used in marking tuna. Tags are affixed on the back of the porpoise. Fishermen are requested to watch for marked porpoise and to return tags they may find, together with information on the date and location of capture, to the Bureau of Commercial Fisheries or cooperating agencies such as the Inter-American Tropical Tuna Commission and the California Department of Fish and Game.

TROPICAL STORM WARNINGS

The United States Weather Bureau, International Airport, San Francisco, California (through Mr. Corday Counts), has again provided the San Diego Biological Laboratory with a copy of Radio KMI schedules of tropical storm advisories and Tehuantepec wind warnings. The weather Bureau has endorsed our request to publish the schedules for information to fishermen.

The tropical storm advisories cover the region from the west coast of Mexico and Central America out to 140° W. longitude. Tehuantepec wind warnings are for the Gulf of Tehuantepec and 150 miles seaward.

The schedules are as follows:

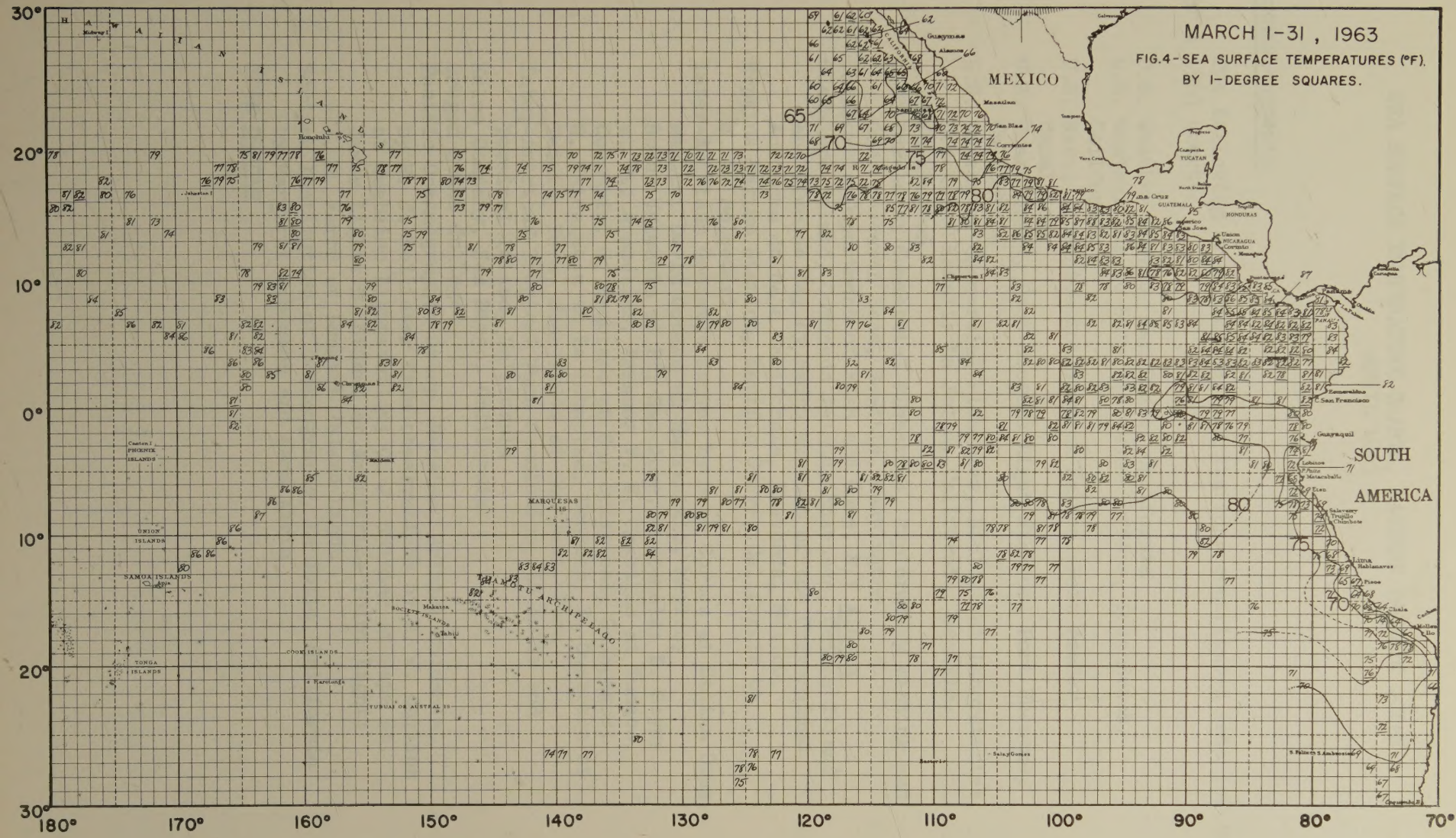
Call Sign	Broadcast Times	Frequency	Power of Station
KMI	0100, 0300, 0500	4,377.4 kc (1)	12 KW
	0700, 1500, 1700	8,754.4 kc (2)	12 KW
	1900, 2100, 2300	13,182.5 kc (3)	12 KW
		17,342.5 kc (4)	12 KW
		22,695.5 kc (5)	12 KW

(1) 1st five minutes of broadcast hours on 4,377.4 kc.
(2) 2nd five minutes of broadcast hours on 8,754.4 kc.
(3) 3rd five minutes of broadcast hours on 13,182.5 kc.
(4) 4th five minutes of broadcast hours on 17,342.5 kc.
(5) 5th five minutes of broadcast hours on 22,695.5 kc.

If any of the above five minute broadcasts have to be cancelled because of other traffic, the broadcast will begin on the first full five minutes available on the frequency indicated in the above table. For example, if there is other traffic at 0100, the broadcast then starts at 0105, on 8,754.4 kc.

RERUN OF TROPICAL SEA TEMPERATURE CHART

Figure 4.--Sea Surface Temperatures (°F) by 1-Degree Squares, March 1-31, 1963, has been rerun and included in this issue as a replacement for poor-quality copy in last month's summary.


MARCH 1-31, 1963
FIG. 4 - SEA SURFACE TEMPERATURES (°F). BY 1-DEGREE SQUARES.
MEXICO
SOUTH AMERICA
HAWAIIAN ISLANDS
Honolulu
Johnston I.
Kingman Reef
Palmyra I.
Christmas I.
Canton I.
PHOENIX ISLANDS
Baker I.
UNION ISLANDS
SAMOA ISLANDS
Apia
TONGA ISLANDS
COOK ISLANDS
Rarotonga
TUBUAI OR AUSTRAL IS.
MARQUESAS
Makatea
SOCIETY ISLANDS
Tahiti
TUAMOTU ARCHIPELAGO
Galapagos
Guaymas
Alamos
Mazatlan
San Blas
Corrientes
Progreso
Campeche
YUCATAN
Vera Cruz
Belize
North Brothers
Puerto Barrios
GUATEMALA
HONDURAS
San Jose
Corinto
NICARAGUA
Managua
Cartagena
Maracaibo
Curacao
Caracas
Barcelona
Cumana
Trinidad
Paramaribo
Georgetown
Manaos
Belem
Fortaleza
Natal
Recife
Maceio
Aracaju
Salvador
Ilheus
Rio de Janeiro
Sao Paulo
Santos
Paranagua
Florianopolis
Porto Alegre
Rio Grande
Montevideo
Buenos Aires
Bahia Blanca
Comodoro Rivadavia
Puerto Deseado
Puerto Santa Cruz
Rio Gallegos
Punta Arenas
Ushuaia
Cape Horn
Esmeraldas
San Francisco
Guayaquil
Salaverry
Trujillo
Chimbote
Lima
Callao
Pisco
Chala
Mollendo
Ilo
Arica
Iquique
Antofagasta
Taltal
Chanaral
Caldera
Coquimbo
Valparaiso
Talcahuano
Corral
Puerto Montt
Puerto Aysen
Puerto Natales
Juan Fernandez Is.
Easter I.
Sala y Gomez
Nazca
Mollendo
Ilo
Arica
Iquique
Antofagasta
Taltal
Chanaral
Caldera
Coquimbo
Valparaiso
Talcahuano
Corral
Puerto Montt
Puerto Aysen
Puerto Natales
Juan Fernandez Is.
Easter I.
Sala y Gomez
Nazca
30°
20°
10°
0°
10°
20°
30°
180°
170°
160°
150°
140°
130°
120°
110°
100°
90°
80°
70°

SEA SURFACE TEMPERATURE CHARTS, EASTERN PACIFIC OCEAN
APRIL 1963

Acknowledgments

The following organizations and stations contributed data for the April 1963 charts:

U.S. Weather Bureau, San Diego, California
U.S. Weather Bureau Ship Visitation Office, Long Beach, California
U.S. Naval Communication Station Balboa, Fort Amador, Canal Zone
U.S. Coast Guard, Port Hueneme Light Station, Port Hueneme, California
U.S. Bureau of Commercial Fisheries, Biological Laboratories, Honolulu, Hawaii; La Jolla, California; Seattle, Washington
U.S. Bureau of Commercial Fisheries, Exploratory Fishing and Gear Research Base, Seattle, Washington
California Department of Fish and Game, R/V Alaska
Guadalupe Island, Coronado Island, Ensenada, Cedros Island and Almejas Bay by Pedro Mercado of the Universidad Autonoma de Baja California, Ensenada, Mexico
Hopkins Marine Station, Pacific Grove, California by J. P. Balesteri
Inter-American Geodetic Survey by Rene Cortes at Salina Cruz, Mexico; David Ortega at Manzanillo, Mexico; Romeo Valencia at Pt. San Jose, Guatemala; D. Reyes at Pt. Armuelles, Panama; V. E. Castillo at Tumaco, Colombia; S. Zambrano at San Cristobal, Galapagos; N. Valenzuela at La Libertad, Ecuador; E. Guerrero at Talara, Peru; Juan Andia at San Juan, Peru
Inter-American Tropical Tuna Commission, La Jolla and Terminal Island, California
Kelco Company, San Diego, California
Oregon State College
Pacific Oceanographic Group, Nanaimo, British Columbia, by H. J. Hollister from observations by R. W. Collins at Quatsino Lightstation; G. J. Skinner at Cape St. James Light; B. Stuart at Amphitrite Point Light; J. M. Hartt at Langara Island Light
Scripps Institution of Oceanography, La Jolla, California by Margaret Robinson and Hans Klein
Ship Bonnie

Charts

Figure 1.--Mean sea surface temperatures (°F) derived from approximately 8000 observations. Squares show temperatures at weather-ship stations. Numerals on shore are temperatures at coastal and light stations.

Figure 2.--Deviation of sea surface temperatures (°F) from long term mean charts of H.O. 225. Hatched areas are colder than mean.

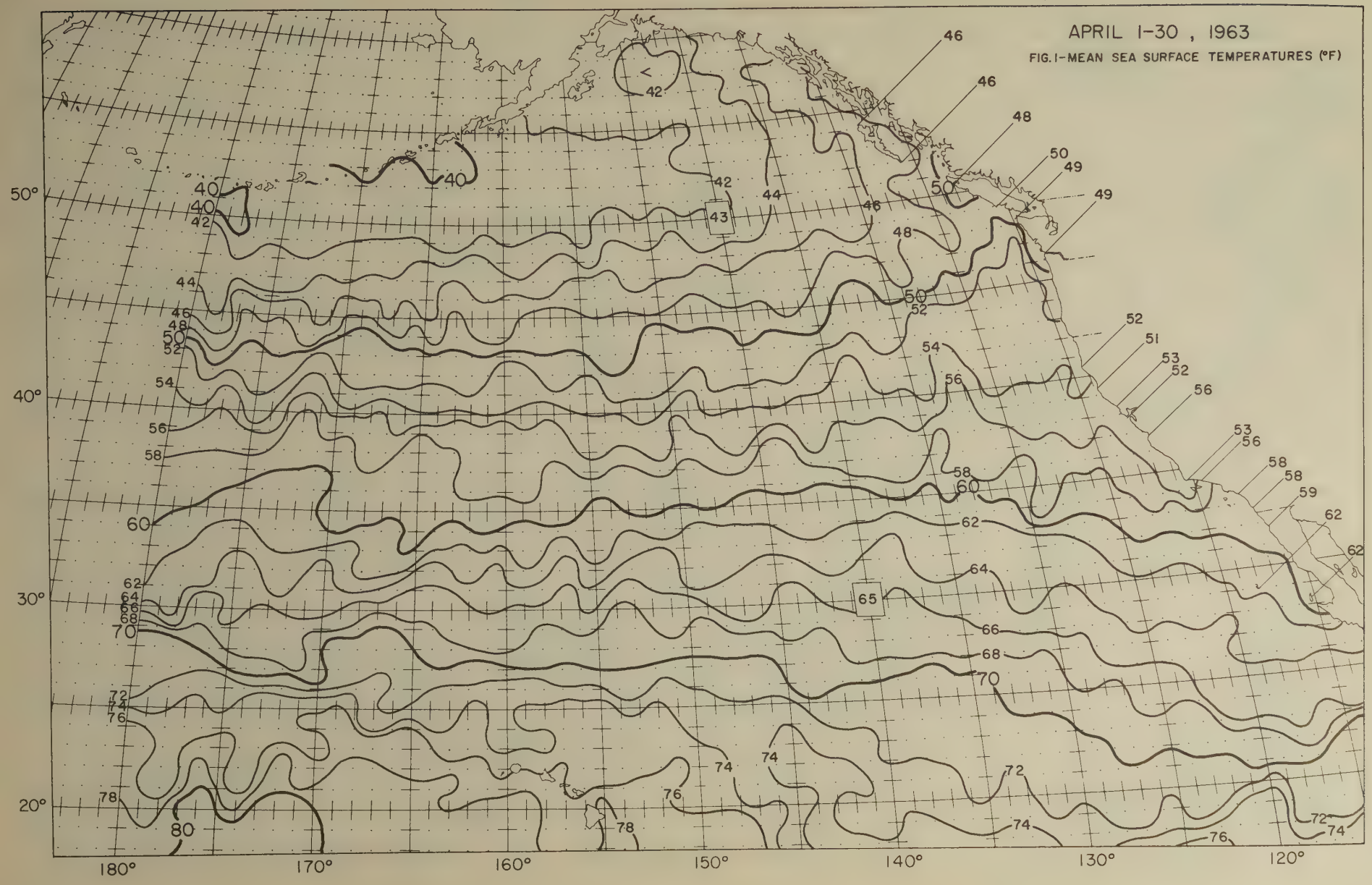
Figure 3.--Deviation of sea surface temperatures (°F) from those of April 1962. Hatched areas are colder than 1962.

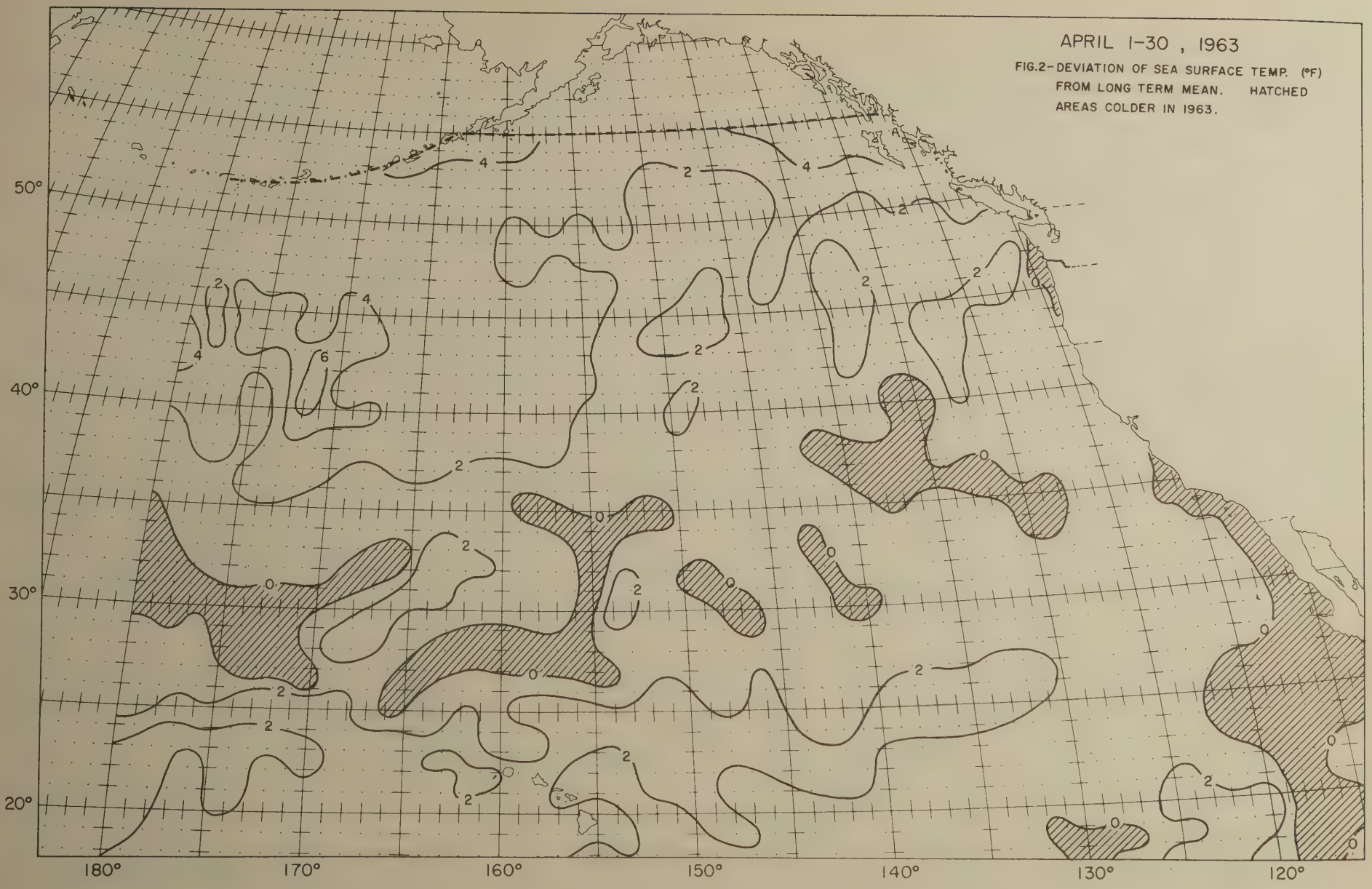
Figure 4.--Sea surface temperatures (°F) by 1-degree squares, approximately 2000 observations. Line under temperatures indicates average of two or more observations. Numerals on shore are temperatures at coastal and light stations.

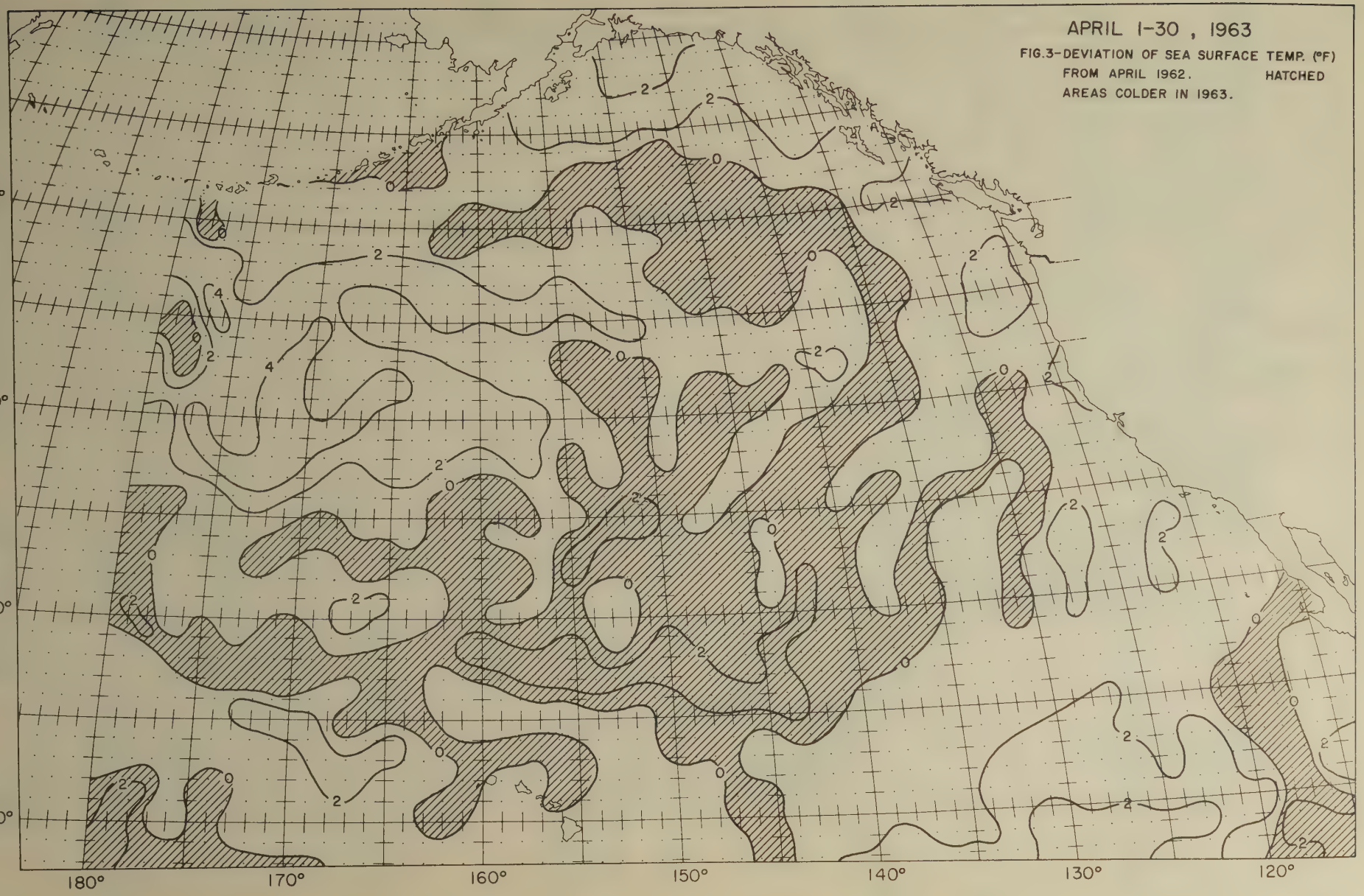
Figure 5.--Deviation of sea surface temperatures (°F) April 1963-April 1962 by 1-degree squares. Shaded areas colder in 1963.

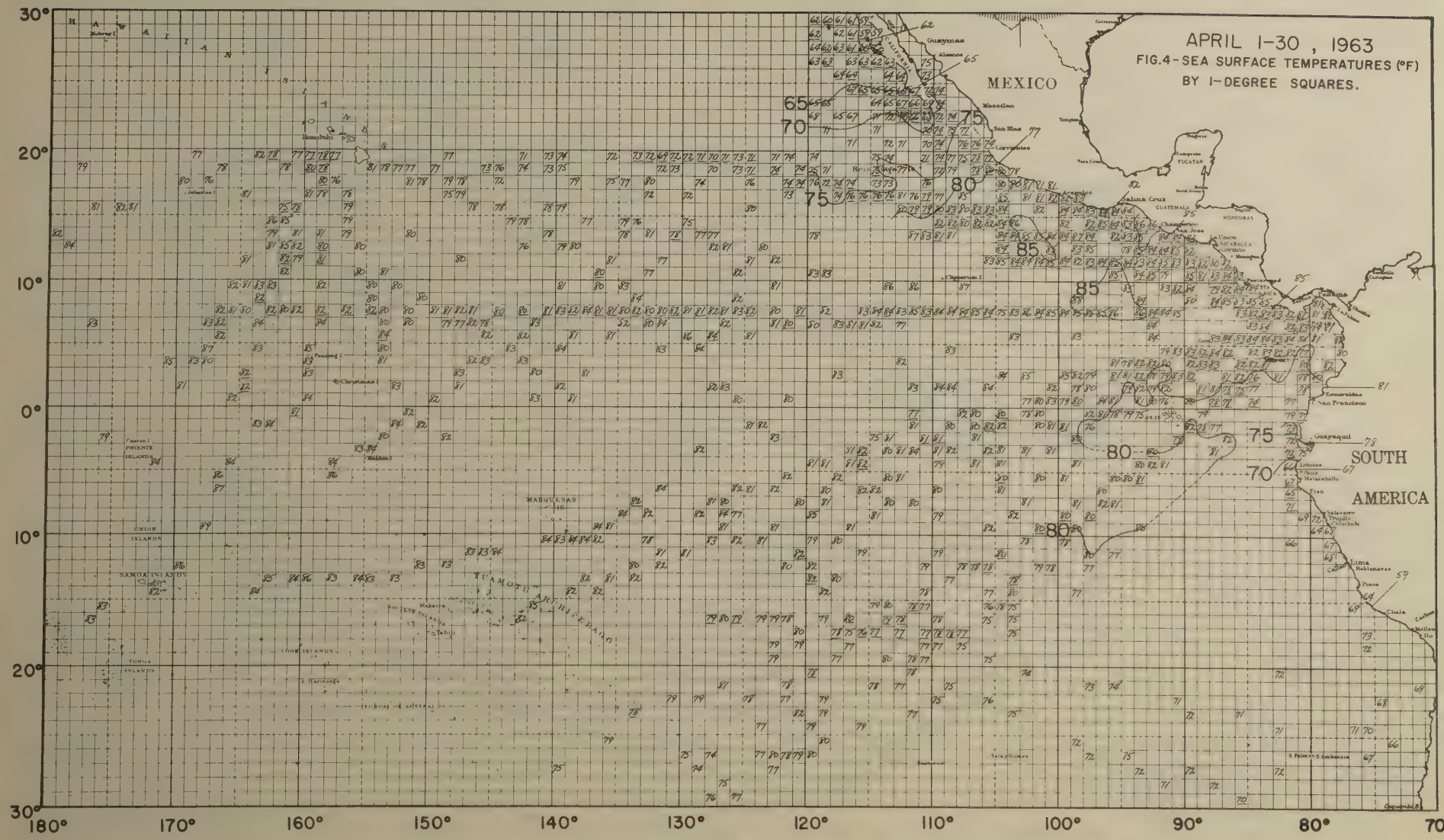
Figure 6.--Deviation of sea surface temperatures (°F) from 12-year mean (1947-1958) by 2-degree squares. Shaded areas colder in 1963.

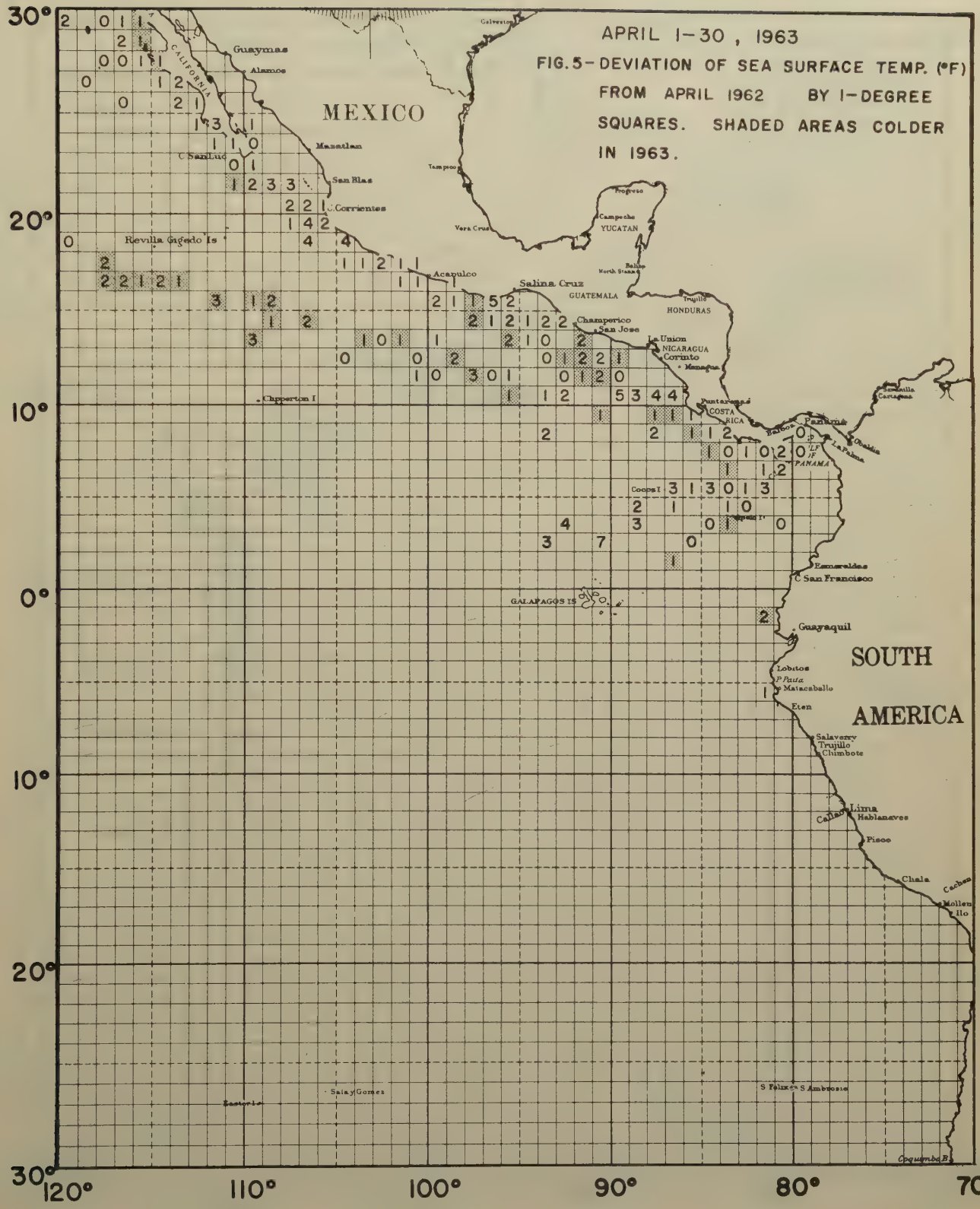
James A. Renner
Fishery Biologist (General)

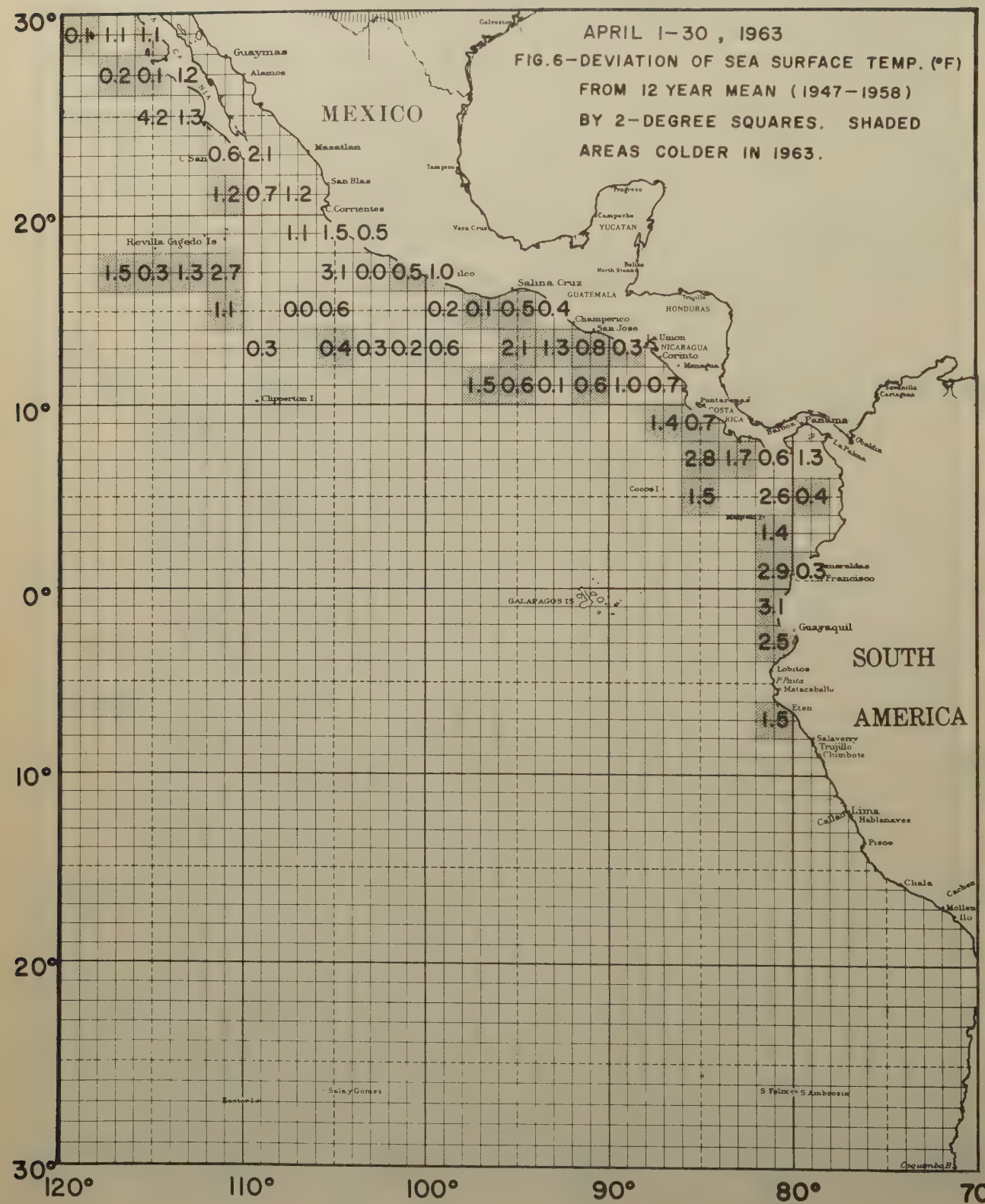

APRIL 1-30 , 1963
FIG. 1-MEAN SEA SURFACE TEMPERATURES (°F)
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°
43
65

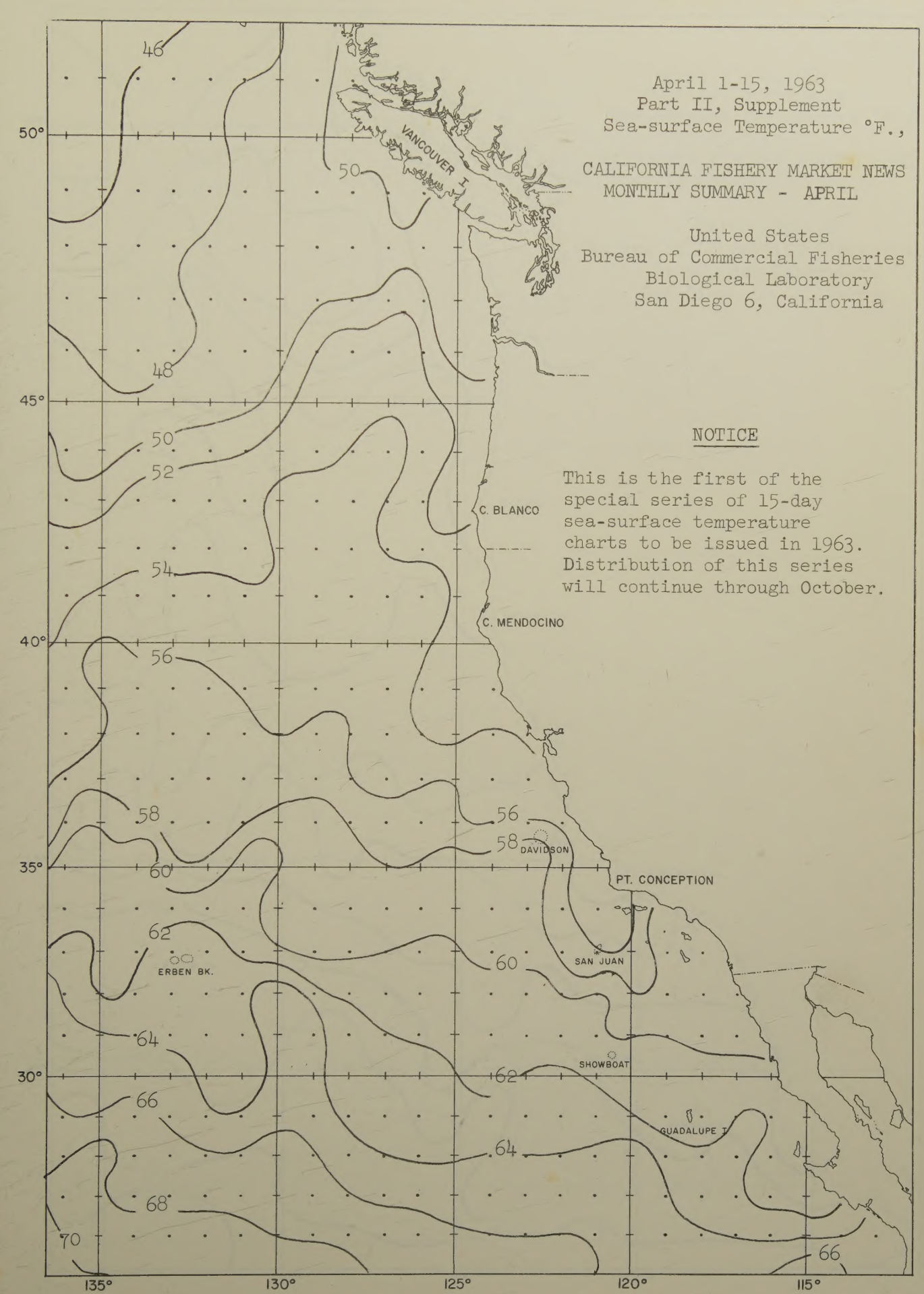

APRIL 1-30 , 1963
FIG.2-DEVIATION OF SEA SURFACE TEMP. (°F) FROM LONG TERM MEAN. HATCHED AREAS COLDER IN 1963.
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°


APRIL 1-30 , 1963
FIG.3-DEVIATION OF SEA SURFACE TEMP. (°F) FROM APRIL 1962. HATCHED AREAS COLDER IN 1963.
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°


APRIL 1-30 , 1963
FIG.4-SEA SURFACE TEMPERATURES (°F)
BY 1-DEGREE SQUARES.
MEXICO
SOUTH
AMERICA
HAWAIIAN ISLANDS
PHOENIX ISLANDS
SAMOA ISLANDS
UNION ISLANDS
TONGA ISLANDS
TUAMOTU ARCHIPELAGO
MARQUESAS
30°
20°
10°
0°
10°
20°
30°
180°
170°
160°
150°
140°
130°
120°
110°
100°
90°
80°
70°


APRIL 1-30, 1963
FIG. 5 - DEVIATION OF SEA SURFACE TEMP. (°F) FROM APRIL 1962 BY 1-DEGREE SQUARES. SHADED AREAS COLDER IN 1963.
MEXICO
SOUTH AMERICA
GUATEMALA
HONDURAS
NICARAGUA
COSTA RICA
PANAMA
YUCATAN
GALAPAGOS IS
Guaymas
Alamos
Mazatlan
San Blas
Corrientes
Revilla Gigedo Is
Acapulco
Salina Cruz
Champerico
San Jose
La Union
Corinto
Managua
Chipperton I
Cocos I
Esmeraldas
C San Francisco
Guayaquil
Lobitos
Paita
Malacaballo
Eten
Salaverry
Trujillo
Chimbote
Lima
Callao
Huacho
Pisco
Chala
Mollendo
Ilo
Sala y Gomez
S Felix
S Ambrosio
30°
20°
10°
0°
10°
20°
30°
120°
110°
100°
90°
80°
70°


APRIL 1–30, 1963
FIG. 6–DEVIATION OF SEA SURFACE TEMP. (°F)
FROM 12 YEAR MEAN (1947–1958)
BY 2-DEGREE SQUARES. SHADED
AREAS COLDER IN 1963.
MEXICO
SOUTH
AMERICA
GUATEMALA
HONDURAS
NICARAGUA
YUCATAN
Guaymas
Alamos
Mazatlan
San Blas
C. Corrientes
Salina Cruz
Champerico
San Jose
La Union
Corinto
Managua
Panama
Coiba I
GALAPAGOS IS
Guayaquil
Lobitos
P. Pasta
Matacaballo
Eten
Salaverry
Trujillo
Chimbote
Lima
Callao
Hablanaves
Pisco
Chala
Mollendo
Ilo
Clipperton I
Revilla Gigedo Is
Sala y Gomez
S. Felix
S. Ambrosio
30°
20°
10°
0°
10°
20°
30°
120°
110°
100°
90°
80°
70°


April 1-15, 1963
Part II, Supplement
Sea-surface Temperature °F.,
CALIFORNIA FISHERY MARKET NEWS
MONTHLY SUMMARY - APRIL
United States
Bureau of Commercial Fisheries
Biological Laboratory
San Diego 6, California
NOTICE
This is the first of the special series of 15-day sea-surface temperature charts to be issued in 1963. Distribution of this series will continue through October.
VANCOUVER I.
C. BLANCO
C. MENDOCINO
DAVIDSON
PT. CONCEPTION
SAN JUAN
ERBEN BK.
SHOWBOAT
GUADALUPE I.
46
48
50
52
54
56
58
60
62
64
66
68
70
50°
45°
40°
35°
30°
135°
130°
125°
120°
115°

April 16-30,1963
Part II, Supplement 2
Sea-surface Temperature °F.,

CALIFORNIA FISHERY MARKET NEWS
MONTHLY SUMMARY - APRIL

United States
Bureau of Commercial Fisheries
Biological Laboratory
San Diego 6, California